SPECIFICATION

TITLE OF THE INVENTION

TOY, DATA TRANSMISSION METHOD, AND DATA TRANSMISSION SYSTEM

This is a nationalization of PCT application of International Publication No. WO 2005/046823 published on May 26, 2005.

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to a toy comprising a removable storage medium, a data transmission method, and a data transmission system, where only owners of a toy can acquire various kinds of contents data according to the toy.

Description of the Conventional Art

Conventionally, a storage medium capable of directly connecting with a connecting interface has been used, where a personal computer has the connecting interface, such as a PC slot, an USB connector or the like. Such the storage medium generally has built in a storage unit of data comprising a semiconductor memory, a hard disk or the like.

The above-described storage medium has been used by mounting it on a case of a three-dimensional shaped object such as an animation character, a game character

or the like (Japanese Utility Model Registration No. 3080552, Patent Document 1). Further, the following system has been also indicated, that is, a system for reading identification information, which is stored in the storage medium, by a personal computer using a cradle or a reader apparatus connected with the personal computer; accessing to a server of a necessary provider; and thereby acquiring specific contents data (Japanese Patent Application Laid Open No. 2003-187096, 2002-63092, Patent Documents 2, 3). On the other hand, in addition to the above-described storage medium and the system for acquiring the contents data, the following apparatus has been also used, that is, an apparatus in which a doll is connected to a personal computer, and moving of the doll can be controlled on the basis of an operation of the personal computer or data acquired from the network (Japanese Patent Application Laid Open No. 2000-135384, Patent Document 4).

Summary of the Invention

As for the storage medium according to the cited patent document 1, it only externally appears to be a specific three-dimensional shape, so that it does not cooperate with a communication processing of a personal computer for receiving specific contents data.

Thus, there is a problem that the storage medium cannot be used for acquiring data related to the three-dimensional shape.

As for the system according to the cited patent documents 2, 3, the cradle or the reader apparatus is necessary between the personal computer and the storage medium. Without cradle or reader apparatus, there is a problem that only the storage medium is not capable of acquiring contents data. Further, as for the system according to the cited patent documents 2, 3, a personal computer itself mainly starts the communication processing, and the above-described cradle or the reader apparatus is interposed. Thus, there is a problem that processings for acquiring contents data from a server complicated, and acquisition of the contents data requires many processings.

Further, as for the apparatus according to the cited patent document 4, it only controls moving of a doll on the basis of an operation of a personal computer or data acquired from the network, and it does not have a storage unit for storing data. Thus, the apparatus cannot cooperated with a processing for acquiring data by a personal computer, so there is a problem that it cannot be used for acquiring the data, like the storage medium according to the cited patent document 1.

Further, since moving of a doll is not related to contents data, there is a problem that it does not control for changing a state of a doll by cooperating with the development of a story in the contents data.

The present invention solves above-described problems, and an objective of the present invention is to provide a toy, a data transmission method, and a data transmission system, where identification data and communication start data are stored in a storage medium which is in the toy, and the toy is connected with an external apparatus comprising a communication function, such as a personal computer, to output the identification data and the communication start data, so that, necessary data can be acquired by connecting with a specific destination of access.

Further, an objective of the present invention is to provide a toy and a data transmission method, where a state of the toy can be changed by providing a light emitting unit, a voice output unit and/or an operation unit at the toy, and transmitting data for operating each unit from a destination of access, so that, the toy can have a new added value.

An aspect of a toy according to the 1st invention in order to solve the above-described problems is as follows. That is, the toy comprising a storage unit

for storing data comprises an external connecting unit capable of directly connecting with an external communication apparatus. The storage unit stores specific identification data and communication start data for starting a communication processing of the external communication apparatus, and can output the identification data and the communication start data to the external thorough the external connecting unit.

An aspect of the toy according to the 2nd invention is as follows. That is, the toy further comprises a light emitting unit and a light emission control unit, which is for controlling light emission of the light emitting unit on the basis of data received from the external through the external connecting unit.

An aspect of the toy according to the 3rd invention is as follows. That is, the toy further comprises a voice output unit and a voice output control unit, which is for outputting a voice from the voice output unit on the basis of data received from the external through the external connecting unit.

An aspect of the toy according to the 4th invention is as follows. That is, the toy further comprises an operation unit and an operation control unit, which is for operating the operation unit on the basis of data received from the external through the external

connecting unit.

An aspect of the toy according to the 5th invention is as follows. That is, the toy further comprises a mounting means capable of mounting it on an external mounted body.

An aspect of a data transmission method according to the 6th invention is as follows. That is, the method comprising the steps of determining whether identification data is registered or not by a data transmission apparatus; and transmitting the data to a communication apparatus. The communication apparatus detects the connecting of the toy, and when detecting the connecting of the toy, the communication apparatus reads identification data and communication start data from the toy, and transmits the identification data to the data transmission apparatus on the basis of the read communication start data. The data transmission apparatus determines whether the received identification data is registered or not, and when the identification data is registered, the data transmission apparatus transmits the data according to the toy to the communication apparatus.

An aspect of the data transmission method according to the 7th invention is as follows. That is, when the identification data is not registered,

registration application data is transmitted to the communication apparatus.

An aspect of the data transmission method according to the 8th invention is as follows. That is, the toy comprises a light emitting unit, the data transmission apparatus transmits data for controlling light emission of the light emitting unit to the communication apparatus, and the communication apparatus outputs the transmitted data to the toy.

An aspect of the data transmission method according to the 9th invention is as follows. That is, the toy comprises a voice output unit, the data transmission apparatus transmits data for outputting a voice from the voice output unit to the communication apparatus, and the communication apparatus outputs the transmitted data to the toy.

An aspect of the data transmission method according to the 10th invention is as follows. That is, the toy comprises an operation unit, the data transmission apparatus transmits data for operating the operation unit, and the communication apparatus outputs the transmitted data to the toy.

An aspect of the data transmission method according to the 11th invention is as follows. That is, data according to the toy is contents data according

to a cartoon, an animation, a game or a movie, in which a character according to the shape of the toy appears. Further, the data transmission apparatus transmits data for operating the operation unit corresponding to action of the character in a scene of the contents data to be transmitted.

An aspect of a data transmission system according to the 12th invention is as follows. That is, in the data transmission system, a data transmission apparatus determines whether identification data is registered or not and transmits the data to a communication apparatus. The communication apparatus comprises a connecting unit capable of connecting with the toy; a detecting means for detecting the connection of the toy with the connecting unit; a data reading means for reading identification data and communication start data from the toy when the detecting means detects the connection of the toy; and a transmitting means for transmitting the identification data to a data transmission apparatus on the basis of the communication start data read by the data reading means. The data transmission apparatus comprises a determining means for determining whether the transmitted data is registered or not; and a data transmitting means for transmitting

data according to the toy to the communication apparatus when the determining means determines that the identification data is registered.

In the 1st invention, the storage unit of the toy stores the communication start data. Thus, the communication start data is outputted to the external apparatus by connecting the toy with the external apparatus, to automatically start the communication processing in the external apparatus, and the toy cooperates with the processing for acquiring the data. Further, the toy comprises the external connecting unit capable of directly connecting with the external apparatus. Thus, the toy can be connected with the external apparatus without using an interconnecting apparatus such as a cradle, so that the toy can be easily connected with the external apparatus. In addition, a doll, a figure, a structure, a vehicle, a sundry article or the like corresponds to the toy, and the doll includes an animal, a virtual living thing, a robot, a personified thing or the like.

In the 2nd and 8th inventions, the toy comprises the light emitting unit which is light-emitted by the data from the data transmission apparatus, so that the toy can be light-emitted and can have rich expression modes to the external. In addition, when the toy is

a doll, the light emitting unit is provided at a position corresponding to eyes, a face or the like of the doll. Thereby, the light emission can be used as one means for expressing emotion of the doll. Further, when the light emitting unit is provided at the inside of the doll, it is preferable that an outer circumference part of the doll is formed with a transparent material in order to see and recognize the light emission from outside.

In the 3rd and 9th inventions, the toy comprises the voice output unit for outputting the voice by the data from the data transmission apparatus. Thus, the toy can output the voice and can have more rich expression modes with respect to the external.

In the 4th and 10th inventions, the operation unit of the toy can be operated by the data from the data transmission apparatus. Thus, the toy can have various expression modes with respect to the external by changing an attitude, a state or the like of the toy. In addition, as for the operation unit, an aroma generating unit for generating an aroma, a color changing unit for changing an appearance color of the toy, a vibration unit for generating a vibration, and a driving unit for driving a part or a whole of the toy are included. When the aroma is generated, it is

preferable that a material, which is a source of a smell and generates a smell by melting with heat, is melted at a heat generating unit. Further, when the appearance color is changed, it is preferable that a material, in which a color is changed corresponding to heat, is used at the outer circumference part of the toy, and the outer circumference part is heated by the heat generating unit. Furthermore, when a part or a whole of the toy is driven, it is preferable that the outer circumference part is structured by assembling a plurality of movable parts or with a material having flexibility, and the movable part or the outer circumference part is driven by the driving unit.

In the 5th invention, the mounting means is provided. Thus, a user can wear the toy or attach the toy to his personal things. Therefore, it can be contributed to prevent losing the toy, and the toy can be used as a kind of accessories, so that the added value of the toy can be increased.

In the 6th and 12th inventions, the communication apparatus communicates with the data transmission apparatus using the identification data and the communication start data stored in the toy, so that the processing for the communication can be carried

out automatically and smoothly. Further, the data transmission apparatus has the data according to the toy, and transmits the data according to the toy to the communication apparatus when the transmitted identification data is registered. Thus, the communication apparatus can acquire the data according to the toy by the communication processing in cooperation with the toy.

In the 7th invention, when the identification data is not registered, the processing for the registration of a user can be carried out smoothly because of transmitting the registration application data. Further, since the data to be contents is not transmitted until the registration is completed, the value of the data to be transmitted can be increased and a security when transmitting the data can be kept.

In the 11th invention, the data according to the toy is the contents data of the cartoon, the animation, the game or the movie in which the character according to the shape of the toy appears. Thus, only a person having the toy can acquire the necessary contents data using the toy and the communication apparatus, so that the value of the contents data is increased. Further, the toy has a role for acquiring the contents data, so that the new value is added to the toy. Furthermore,

the data transmission apparatus transmits the data for operating the operation unit of the toy corresponding to the action of the character in the contents data to be transmitted. Thus, the toy can be operated cooperating with the action of the character of the contents data which the communication apparatus receives and reproduces, and the contents data with the toy can be enjoyed from many aspects. In addition, when the data transmission apparatus collectively transmits the contents data to the communication apparatus, it is preferable that it transmits the contents data which is added with data for operating the operation unit at a part where the character acts. Further, when the data transmission apparatus transmits the contents data with streaming, it is preferable that it transmits data for operating the operation unit when transmitting the contents data at a scene when the character acts.

According to the 1st invention, since the storage unit of the toy stores the communication start data, the communication starts using the communication start data to obtain the necessary data automatically and smoothly. Further, since the toy comprises the external connecting unit capable of directly connecting with the external apparatus, the toy can

be connected with the external apparatus without using the interconnecting apparatus such as the cradle, so that the structure for the communication can be simplified.

According to the 2nd and 8th inventions, since the toy comprises the light emitting unit which can be light-emitted by the data from the data transmission apparatus, the toy is light-emitted when receiving the transmitted data, so that the expression modes to the external can be increased.

According to the 3rd and 9th inventions, since the toy comprises the voice output unit for outputting the voice by the data from the data transmission apparatus, the toy can appeal with the voice spect to the external, so that the expression modes of the toy can be increased.

According to the 4th and 10th invention, since the toy comprises the operation unit operated by the data from the data transmission apparatus, the state or the attitude of the toy or the like can be changed on the basis of the transmitted data, so that the toy can have various expression modes.

According the 5th invention, since the toy comprises the mounting means, an owner can wear the toy, or attach to his personal thing. Thus, lose of

the toy can be prevented, and the toy can be used as a kind of accessories.

According to the 6th and 12th invention, since the communication apparatus communicates with the data transmission apparatus using the identification data and communication start data stored in the toy, the communication with the specific data transmission apparatus can be established automatically and easily. Further, when the identification data is registered, the data according to the toy can be acquired smoothly by the communication apparatus.

According to the 7th invention, when the identification data is not registered, the processing for a user's registration can be carried out smoothly since the register application data is transmitted. Further, the data according to the toy is not transmitted until the registration is completed, so that the value of the data according to the toy can be increased.

According to the 11th invention, the data according to the toy is the contents data of the cartoon, the animation, the game or the movie in which the character according to the appearance of the toy appears. Thus, only a person having the toy can acquire the necessary contents data using the toy and the communication apparatus, and the novel value of

acquiring the contents data is increased. Further, the data transmission apparatus transmits the data for operating the operation unit of the toy according to the action of the character in the contents data to be transmitted. Thus, the toy can act cooperating with the action of the character of the contents data, so that the contents data can be enjoyed from many sides.

BRIEF EXPLANATION OF DRAWINGS

Figure 1 is a schematic view of a data transmission system according to an embodiment of the present invention.

Figure 2 is a perspective view of a toy.

Figure 3 is a block diagram illustrating an inside structure of the toy.

Figure 4 (a) is a schematic view illustrating an action in the left and right directions of a head part, and Figure 4 (b) is a schematic view illustrating an action in the front and rear directions of a head part.

Figure 5 is a block diagram illustrating an inside structure of a personal computer.

Figure 6 is a block diagram illustrating an inside structure of a server.

Figure 7 is a schematic view illustrating a display screen image of a menu.

Figure 8 is a schematic view illustrating a display

screen image of a registration application.

Figure 9 is a chart illustrating a registration table.

Figure 10 is a schematic view illustrating a data structure of contents data.

Figure 11 is a first flowchart according to a data transmission method.

Figure 12 is a second flowchart according to a data transmission processing of a server.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENT

Figure 1 is a schematic view of a data transmission system 1 according to an embodiment of the present invention. As for the data transmission system 1 of this embodiment, when a toy 10 is connected with a connecting unit 21 provided at one side surface of a mobile type personal computer 20 which is an external communication apparatus, a communication connection with a specific server 30 (Web server or FTP server) is established through a network 40, and necessary data can be acquired from the server 30 by the personal computer 20.

Figure 2 is a perspective view illustrating an appearance of the toy 10. The toy 10 has a shape of a doll, and a doll main body 10a which is an outer circumference part is formed by assembling a body part

10b made from a synthetic resin and a head part 10c made from a synthetic resin. The body part 10b is formed integrally with a torso, arms and legs. As illustrated in Figures 4(a), 4(b), the head part 10c is mounted to the body part 10b so as to be able to move in the front, rear, left and right directions with respect to the body part 10b.

More particularly, the body part 10b has an opening 10g formed at an end part thereof on the mounting side of the head part 10c, and has a spherical recessed part 10f communicated with the opening 10g at the inside thereof. Further, the head part 10c has a neck part 10h projected on the mounting side thereof to the body part 10b, where the neck part is thinner than an inner diameter of the opening 10g of the body part 10b, and has a spherical rotary part 10i at an end portion of the neck part 10h, where the rotary part 10i is rotatably housed in the recessed part 10f of the body part 10b. Thereby, the toy 10 can carry out a mechanical action, i.e., the head part 10c is shaken in the front, rear, left and right directions by the rotation of the rotary part 10i with respect to the recessed part 10f. In addition, a lower end portion of the rotary part 10i of the head part 10c has a metal piece 10k which is attracted to the magnetic force.

Further, as illustrated in Figure 2, the toy 10 has a ring part 10e at a top portion of the head part 10c, and a string-like strap 12 is mounted to the ring part 10e, where the strap 12 can be tied annularly. The strap 12 has a function as the mounting means. Thus, the toy 10 can be mounted to a neck of an owner of the toy 10 or a grip portion of a bag of an owner, corresponding to the external mounted body. Thus, since an owner can wear the toy 10 with the strap 12, the toy 10 can be used as a kind of accessories.

Furthermore, the toy 10 has an external connecting unit 11 which is projected from an end portion on the leg side of the body part 10b. The external connecting unit 11 has a terminal shape corresponding to a specification of a USB (Universal Serial Bus).

Figure 3 is a block diagram illustrating an inside structure of the toy 10. The toy 10 has a control unit 13, a storage unit 14, a light emitting unit 15, a vibration unit 16, a voice output unit 17 and a movable driving unit 18 at the inside of the doll main body 10a, and has a structure in which each unit from 13 to 18 is connected with an internal bus 19 for transmitting data, which is extended from the external connecting unit 11. In addition, although it is not illustrated in the drawings, the toy 10 has power supply

lines extended to each unit from 13 to 18 from the external connecting unit 11, and when the toy 10 is connected with the external communication apparatus, electric power is supplied from the communication apparatus to each unit from 13 to 18 through the external connecting apparatus, so that the toy 10 does not have a power supply inside thereof.

The control unit 13 is for controlling the action of each unit from 14 to 18, and the input and output of data, or the like. That is, when the toy 10 is connected with the external communication apparatus, the control unit 13 carries out the following processing with respect to the storage unit 14, that is, a processing for carrying out a control of the output so as to read the data stored in the storage unit 14 by the external communication apparatus, a processing for carrying out an address assignment for the writing so as to store the data received from the external in the storage unit 14, and a processing for carrying out a synchronous control with respect to a write request from the external, or the like. Further, the control unit 13 carries out the following processing as a light emission control unit with respect to the light emitting unit 15, that is, a processing for transmitting data for light-emitting (hereinafter, it is called as light

emitting data), which is received from the external, to the light emitting unit 15.

Furthermore, the control unit 13 carries out a processing for transmitting data for the vibration (hereinafter, it is called as vibration data), which is received from the external, to the vibration unit 14 as an operation control unit with respect to the vibration unit 16. Further, the control unit 13 carries out a processing for transmitting data for the voice output (hereinafter, it is called as voice data), which is received from the external to the voice output unit 17 as a voice output control unit, with respect to the voice output unit 17. Further, the control unit 13 carries out a processing for transmitting data for driving a neck of the head part 10 to shake (hereinafter, it is called as driving data), which is received from the external, to the movable driving unit 18 as a operation control unit, with respect to the movable driving unit 18.

A semiconductor memory is used for the storage unit 14 in this embodiment, and the identification data and the communication start data are pre-stored in this memory. The identification data is data corresponding to a personal number of the toy in order to identify the toy 10 from the other toy, and in this embodiment,

a number of "10000", "10001" or the like is used. Thereby, only one toy 10 storing the identification data of "10000" exists in the world, and only one toy 10 storing the identification data of "10001" also exists in the world.

The communication start data is automatic starting type program data in which contents for starting a communication processing of the external communication apparatus is specified. In the communication start data in this embodiment, the URL (Uniform Resource Locator) of the Web page, which a server 30 illustrated in Figure 1 has, is specified as a connecting destination of the communication. A processing for accessing to the Web page of the server 30 is specified when the external apparatus establishes the communication connecting with the server 30 through a server of a provider to be communicated (it is not illustrated in the drawings). In addition, the storage unit 14 keeps the free space capable of storing the data in addition to the identification data and the communication start data, and can store various kinds of data received from the external.

A light emitting diode (LED) is used for the light emitting unit 15 in this embodiment and is light-emitted when receiving the light emitting data. In addition,

two light emitting parts 15 are mounted respectively to portions corresponding to both eyes at the head part 10c illustrated in Figure 2, and a state of lighting both eyes of the toy 10 can be expressed from an appearance by light-emitting in the light emitting part 15. The vibration unit 16 corresponds to the operation unit using a vibration element in this embodiment, and is vibrated (operated) when receiving the vibration data. In addition, the vibration unit 16 is provided in the body part 10b, and a state of trembling and vibrating the body of a doll can be expressed from an appearance by vibrating in the vibration unit 16.

A semiconductor which emits two or more electronic sounds is used for the voice output unit 17 in this embodiment, and emits an electronic sound of a kind corresponding to the received voice data when receiving the voice data. The voice output unit 17 is provided in a body part 19b.

The movable driving unit 18 corresponds to the operation unit. The movable driving unit 18 is formed in a box shape, and provided facing to the rotary unit 10i of the head part 10c, as illustrated in Figure 4 (a). The movable driving unit 18 comprises a first electromagnetic coil 18a and a second electromagnetic coil 18b on the left and right sides, and a third

electromagnetic coil 18c and a forth electromagnetic coil 18d in the front and rear sides, as illustrated in Figure 4 (b). When receiving the driving data, the movable driving unit 18 carries out an action for supplying a current to the first electromagnetic coil 18a to the forth electromagnetic coil 18d in thisorder and exciting those. By this exciting, a metallic piece 10k of the head part 10c is attracted to the first electromagnetic coil 18a to the forth electromagnetic coil 18d in this order, and as a result of this, the head part 10c is inclined in the left, right, front, and rear directions.

According to the toy 10 in this embodiment, the light emitting, the vibration, the voice output and the inclination of the head part 10c becomes possible on the basis of various kinds of data for the light emitting, the vibration, the voice output and the driving from the external. Thus, the appearance and state as though the doll expresses feeling become possible.

On the other hand, Figure 5 is a block diagram illustrating an inside structure of a personal computer 20 connected with the toy 10. The personal computer 20 has a structure in which a CPU 23, a hard disk 24, a RAM 25, a ROM 26, a display interface unit 27, a voice

interface unit 28 and a communication unit 29 are connected with an internal bus 20c (for PC) which is extended from a connecting unit 21 provided in a casing 20a. In addition, the personal computer 20 has power supply lines (these are not illustrated in the drawings) for supplying electric power to each unit from 21 to 29, where these power supply lines are connected with an external commercial power source. Thereby, electric power can be supplied to the apparatus connected with the connecting unit 21.

The connecting unit 21 is formed in a terminal shape corresponding to the USB specification, and can be directly connected with the external connecting unit 11 of the toy 10. Further, the connecting unit 21 can output various kinds of data by the control of the CPU 23 to the external, and can receive various kinds of data from the external. The hard disk 24 is for storing various kinds of data and programs, and stores a communication program and a contents reproducing program in addition to a program according to an operating system and various kinds of application programs in this embodiment.

The communication program is for specifying the following processings, that is, a processing for connecting with a server of a provider relating to the

communication of the personal computer 20 according to a pre-set communication protocol, and a processing for accessing to various kinds of servers connected with a network 40 through the provider. As for the general communication program, the personal computer 20 receives an operation of a user and makes the CPU 23 execute the above-described processings. However, as for the communication program in this embodiment, the communication connecting with the server 30 is established automatically by the CPU 23 on the basis of the communication start data stored in the toy 10. Further, in the communication program, processing up to the process for transmitting the read identification data to the server 30 can be automatically carried out by the CPU 23, as described below.

Further, the contents reproducing program is a program for specifying the contents for reproducing the contents data received from the server 30 by the personal computer 20, as described below. The contents reproducing program specifies the following processings, that is, a processing for displaying data according to an image included in the contents data on a display screen 20b, and a processing for outputting data according to a voice of the contents data from a speaker 22. Further, as for the contents reproducing

program, as described below, the contents data in this embodiment is suitably attached with light emitting data, vibration data, voice data and driving data, which are described below, and making the CPU 23 to carry out the following processing is also specified, that is, a processing for outputting each data to the external through the connecting unit 21.

The CPU 23 is functioned as a detecting means for detecting whether the toy 10 is connected with the connecting unit 21 or not on the basis of an operating system stored in the hard disk 24 in this embodiment. Further, the CPU 23 is functioned as a data reading means for reading the identification data and the communication start data stored in the toy 10 when connecting the toy 10 with the connecting unit 21 is detected. Furthermore, the CPU 23 is functioned as a transmitting means for starting the communication program on the basis of the read communication start data and transmitting the identification data to the server 30.

Further, when the register application data is transmitted from the server 30 as described below, the CPU 23 carries out a processing for receiving data for the registration inputted by a key board, a mouse and the like (these are not illustrated in the drawings),

and transmitting the received data to the server 30 on the basis of the communication program. Further, when menu data is transmitted from the server 30 as described below, the CPU 23 carries out a processing for receiving data having contents selected by a key board, a mouse and the like (these are not illustrated in the drawings), and transmitting a transmitting request for requesting contents data to the server 30 on the basis of the communication program.

The display interface unit 27 is connected with the display screen 20b, and carries out a processing for displaying the data received through the internal bus 20c (for PC) on the display screen 20b. The voice interface unit 28 is connected with the speaker 22, and carries out a processing for outputting the data received through the internal bus 20c (for PC) as the voice from the speaker 22. Further, the communication unit 29 is for connecting a communication cable with the network 40 such as Internet, and carries out a processing for transmitting and receiving data according to the communication. In addition, the RAM 25 is for temporarily storing various kinds of data according to the processing of the CPU 23, and the ROM 26 is for storing the processing contents independent of the operating system of the CPU 23.

Figure 6 is a block diagram illustrating main parts of the inside of a sever 30. The server 30 corresponds to a data transmission apparatus for transmitting data. In this embodiment, the server 30 transmits following contents data and data using a server computer, that is, contents data according to any one of a demonstration image of a cartoon, an animation, a game, a movie and a soft ware, and an image according to a help guide of a soft ware, where the demonstration image appears as a character according to a shape of the toy 10, and data according to the toy 10, such as the light emitting data, the vibration data or the like of the toy 10. The sever 30 has a structure in which a communication connecting unit 31, a CPU 32, a RAM 33, a ROM 34 and a hard disk 35 are connected with an inside bus 36 (for a sever).

The hard disk 35 stores various kinds of programs, data or the like. In this embodiment, the hard disk 35 stores a server communication program, a determination program, menu data, register application data for the register application, a registration table and various kinds of contents data. In addition, contents data which is newly produced is stored at any time to the hard disk 35.

The server communication program has a

specification making the CPU 32 to carry out the following processings, that is, a processing for carrying out a communication with the external, and a processing for transmitting various kinds of data corresponding to the access from the external. More particularly, the server communication program has a specification making the CPU 32 to carry out the following processings, that is, a processing for receiving the identification data from the external, a processing for transmitting the menu data or the register application data to the access source on the basis of an instruction of the determination program, and a processing for transmitting various kinds of contents data to the access source on the basis of the contents selected according to the menu data.

The menu data is data according to the contents displayed on the display screen 20b of the personal computer 20 illustrated in Figure 7, and has the contents for displaying the following buttons on the display screen 20b, which can be selected by a keyboard, a mouse or the like. That is, a first selection button 50a of "SEE FROM THE FIRST STORY", a second selection button 50b of "SEE FROM THE LAST CONTINUATION", a third selection button 50c of "SEE THE UPDATED PART", and a forth selection button 50d of "GAME". The register

application data is data according to the contents displayed on the display screen 20b of the personal computer 20 illustrated in Figure 8, and has the contents for displaying the following items which can be inputted by a keyboard, a mouse or the like. That is, "NAME", "ADDRESS", "TELEPHONE NUMBER", "MAIL ADDRESS", and "SET TRANSMITTING PROPERTY" which enables data transmission to the personal computer 20.

Further, the determination program has a specification of the following contents, that is, the contents making the CPU32 to carry out a processing, which is for updating the contents of a registration table 51 illustrated in Figure 9 on the basis of the identification data and the data for the registration which are transmitted from the external, and the contents making the CPU32 to carry out a processing, which is for determining whether the transmitted identification data is registered or not on the basis of the contents of the registration table 51. Further, when it is determined that the transmitted identification data is registered, the determination program makes the CPU32 to carry out a processing, which is for transmitting the instruction to the server communication program to transmit the menu data. Furthermore, when the it is determined that the

transmitted identification data is not registered, the determination program makes the CPU 32 to carry out a processing, which is for transmitting the instruction to the server communication program to transmit the register application data.

Figure 10 is a schematic view illustrating a data structure of contents data stored in the hard disk 35. The contents data in this embodiment has the contents, in which when the contents are a cartoon, for example, the toy 10 illustrated in Figure 2 appears as a character and takes various actions corresponding to developement of a story. The contents data has a structure that the light emitting data, the voice data, the driving data and the vibration data are suitably added to data positions from P1 to P6 corresponding to scenes where the character (the toy 10) takes actions from "the beginning" to "the end" of a story.

Fir example, the light emitting data is added to the data position P1 corresponding to the scene where the character is surprised in the story of a cartoon, and the light emitting data, the vibration data, the voice data and the driving data are added to the data position P3 corresponding to the scene where the character is pleased. Since the contents data has such the structure, the toy 10 can be suitably carried out

the light emission, the voice output, the vibration and the moving of the head part 10c, which cooperates interlocked with the actions of the character in the story of a cartoon, so that a user can enjoy the digitalized contents of a cartoon from many aspects.

In addition, in the case that a whole or a needed part of the above-described contents is transmitted collectively to which date the personal computer 20, when added positions such as the light emitting data, the voice data and the like are added are reproduced corresponding the course of to reproduction of the contents data in the personal computer 20, the light emitting data, the voice data and the like are outputted to the toy 10 on the basis of the specification contents of a contents reproduction program, and the contents of the contents data are certainly cooperates with light-emitting, outputting the voice or the like of a doll. On the other hand, in the case that the contents data are transmitted to the personal computer 20 in a streaming manner, the added light emitting data, the voice data and the like are transmitted with the necessary positions of the transmitted contents data, and the reproduced contents of the contents data to be reproduced cooperates certainly interlocked with light-emitting, outputting the voice and the like of

a doll.

Further, the CPU 32 updates the contents of the registration table 51 illustrated in Figure 9 with data for the registration, which is transmitted from the external, on the basis of the above-described determination program. In the registration table 51, the identification data ("10000", "10002" or the like) of the toy 10 to be produced is pre-written, and a section of "Registration" is pre-written with the number of "0". The CPU 32 overwrites the number of "1" at the section of "Registration" of the identification data, in which the data for the registration is transmitted. Further, the CPU 32 suitably writes the sections of "Name", "Address" and the like on the basis of the data for the registration, and writes a transmitting state of the data up to the last time of the registered user at a section which is not illustrated in Figure 9.

Further, the CPU 32 is functioned as a determining means for determining whether the transmitted identification data is registered or not, and a processing for this determination is carried out by identifying whether the section of "Registration" of the registration table 51 is the number of "1" or "0". Further, when it is determined that the transmitted identification data is registered, the CPU 32 is

functioned to transmit the menu data on the basis of the above-described communication program, and data transmitting means for transmitting the contents data corresponding to the transmission request, which returned back corresponding to the contents selected by the menu data. Furthermore, when it is determined that the transmitted identification data is not registered, the CPU 32 carries out a processing for transmitting the register application data on the basis of the above-described communication program.

The communication connecting unit 31 of Fig 6 receives various kinds of data by connecting with the network 40, and receives the identification data as a data receiving means. Further, the communication connecting unit 31 also carries out an output processing for transmitting the contents data, the menu data and the registration application data. In addition, the RAM 33 temporarily stores various kinds of data for the processings, and the ROM 34 stores the necessary data.

Then, a series of processings for transmitting data in a data transmission method according to the data transmission system 1 having the above-described structure will be described on the basis of a first flow chart illustrated in Figure 11.

The CPU 23 of the personal computer 20 detects connecting of the toy 10 with the connecting unit 21 at first (S1). When connecting of the toy 10 is not detected (S1: NO), the CPU 23 waits until connecting the toy 10. Further, when connecting of the toy 10 is detected (S1: YES), the CPU 23 of the personal computer 20 reads the identification data and the communication start data from the toy 10 (S2). Then, the CPU 23 establishes the communication connection with the server 30 on the basis of the communication start data, and transmits the identification data to the server 30 (S3).

The server 30 determines whether the transmitted identification data is registered or not (S4). When the identification data is not registered, the server 30 transmits the register application data to the personal computer 20, and the personal computer 20 transmits the necessary data for the register application (the registration data) which is inputted to the register application by a keyboard, a mouse and the like to the server 30 (S5). The server 30 completes the registration with respect to the unregistered identification data with the transmitted registration data (S6). Further, when it is determined that the identification data is registered in the registration

determining step of the identification data (S4), or when the above-described registration of the identification data is completed (S6), the server 30 transmits the necessary contents data to the personal computer 20, and the personal computer 20 receives and reproduces the transmitted contents data (S7). When the server 30 transmits the above-described contents data, the added light emitting data, voice data and the like are also transmitted.

Thereby, in the personal computer 20, any one of contents of a cartoon, an animation, a movie or a game is suitably displayed on the display screen 20b by the reproduction of the contents data, and the necessary voice is outputted from the speaker 22. Further, the personal computer 20 outputs the light emitting data, the voice data and the like to the toy 10 corresponding to advance of the story, in which these data are added to the transmitted contents data. Thus, the toy 10 connected with the personal computer 20 is carried out the light emission, the voice output and the like according to the action of the character corresponding to advance of the contents, so that a user can enjoy the production in which the toy 10 is interlocked with the contents.

Figure 12 is a second flow chart illustrating a

detailed procedure of processings in the server 30 with respect to the processings from (S4) to (S7) in the first flow chart in Figure 11.

When the server 30 receives the identification data (S10), the server 30 determines whether the identification data is registered or not on the basis of the registration table 51 in Figure 9 (S11). When it is determined that the identification data is not registered, that is, when the space of "Registration" is written with the number of "0" (S11: NO), the server 30 transmits the registration application data according to the displayed contents in Figure 8 to the personal computer 20 (S12), and determines whether the registration data is received from the personal computer 20 or not (S13).

When the registration data is not received (S13: NO), the server 30 waits until receiving the registration data. When the registration data is received (S13: YES), the server 30 writes the received registration data into the registration table, and registers the identification data (S14). Further, when the identification data is registered (S11: YES), or after the identification is registered (S14), the server 30 transmits the menu data according to the displayed contents in Figure 7 to the personal computer

20 (S15).

Then, the server 30 determines whether the menu data receives the contents (selected data) from the personal computer 20 or not (S16), in which the selected data are selected as the transmission request in the personal computer 20. When the selected data is not received (S16: NO), the server 30 waits until receiving the selected data. On the other hand, when the selected data is received (S16: YES), the server 30 transmits the contents data corresponding to the selected contents to the personal computer 20 (S17).

Thereby, as for the data transmission system 1 according to the present invention, the communication connecting with the server 30 can be automatically established by only connecting the toy 10 with the personal computer 20, so that a user's burden for communication can be reduced. Further, the contents data can not be acquired when the registration is not carried out, so that the security when transmitting the contents data can be kept. Further, a user cannot acquire the contents data if not having the toy 10, so that scarcity and availability restriction of the contents data can be increased. Furthermore, a user can easily acquire the necessary contents data by transmitting the menu data to the user side.

In addition, the data transmission system 1 is not limited to the above-described embodiment, and various changed examples can be applied. For example, as for the toy 10, both or one of the body parts 10b and the head part 10c are made from a transparent synthetic resin. When these are transparent, the light emitting unit 15 may be provided at the inside of the toy 10 in order to recognize from the appearance. Further, the toy 10 can have a structure, in which parts other than the head part 10c can be assembled not integrally with the body part 10b but movably with respect to the body part 10b, and can be moved by the movable driving unit 18. Further, the toy 10 can have a data structure, in which the voice output unit 17 can output different voices corresponding to two or more voice data, and the contents data comprises different kinds of voice data corresponding to the scene.

Furthermore, the toy 10 is not formed by assembling two or more parts, but a doll main body may be formed with a synthetic resin or a synthetic rubber having flexibility. Further, a mechanical function such as a motor and a cam function may be used for the movable driving unit 18, and a doll may be operated by moving flexibly a part of the doll main body. Further, a metal

material may be used for a part of the toy 10, and this metal part can be operated. Further, a source of a smell, which generates a smell when melting, and a heating unit for melting the source of a smell on the basis of melting data from the external may be provided, and the melting data is added to a necessary position of the contents data. Thereby, a smell can be generated from the toy 10 interlocking with the contents. Furthermore, as for the toy 10, a material in which a color is changed according to a temperature of the outer circumference part may be applied, and a heating unit for heating the outer circumference part on the basis of color changing data is provided, and further, the color changing data is added to a necessary position of the contents data. Thereby, a color of the appearance of the toy 20 can be changed interlocking with the contents.

Further, the toy 10 can use a mounting means, such a key holder, a chain or the like, other than the strap 12. On the other hand, the mounting means can be omitted. Further, the external connecting unit 11 projected from the toy 10 may be projected from the other positions other than the foot part. Furthermore, the toy 10 can be applied to various kinds of communication apparatuses other than the personal computer 20, where

the communication apparatuses are PDA (Personal Digital Assistant), a portable telephone, and a telephone corresponding to the PHS, which comprise the communication function. When the toy 10 is connected with the other kinds of communication apparatuses, it is necessary to change a specification of the external connecting unit 11 to a specification (the PC card specification according to PCMCIA, the IEEE 1394 or the like) corresponding to the connection. Further, the toy 10 can has a structure, in which the storage unit 14 of the toy 10 pre-stores the first half of the contents data or data of first several histories of the contents data comprising two or more stories, and when toy 10 is connected with the personal computer 20 and reproducing the stored data is completed, the second half of the contents data or data of residual several histories is transmitted from the server 30. In this case, the first half of the contents data or the data of the first several histories can be reproduced by only connecting the toy 10 with the personal computer 20, without communicating with the server 30. Further, the toy 10 may be formed to have a shape of a doll of an animal, a virtual living thing, a robot, a personified thing, and may be formed to have a shape of a figure, a structure, a vehicle, a sundry article or the like

other than the doll.

Furthermore, the server 30 may add the operation data such as the light emitting data, the voice data or the like to the menu data according to the displayed contents illustrated in Figure 7 and the registration application data according to the displayed contents illustrated in Figure 8, and transmit those. In this case, the toy 10 is operated even at the time of the menu screen or the registration application screen, so that selecting or inputting a matter is urged. Further, the server 30 may transmit an image according to demonstration contents, an image according to help contents of a soft ware or the like as the contents data. In addition, in the above-described embodiment, it is described that the communication is carried out between the personal computer 20 and the server 30. However, the present invention can be applied to an embodiment, in which two communication terminal apparatuses (a personal computer, PDA or the like) connected each other by various kinds of networks such as the LAN or the WAN are used, and the toy 10 is connected with one communication terminal apparatus to thereby carry out the communication with another communication apparatus.